BERGAMASKITE.—A variety of amphibole. Lucchetti[1] describes under this name a variety of hornblende from Italy, which contains almost no magnesia. It occurs in green acicular crystals with the following composition: SiO_2 36.8 FeO 22.9 Fe_2O_3 14.5 Al_2O_3 15.1 CaO 5.1 MgO 0.9 Na_2O 4. K_2O 0.4.

NEW BISMUTH MINERALS.—Domeyko[2] has described a large number of interesting Bismuth minerals from South America. Among them are *Bolivite*, an oxysulphide of bismuth ($Bi^2S^2 + Bi^2O^3$) and *Taznite*, a chloro-arseniate and chloro-antimoniate of Bismuth. Bolivite occurs crystallized. Taznite is amorphous and sometimes imperfectly fibrous.

THE OPTICAL PROPERTIES OF PYROMORPHITE AND MIMETITE.—Jannetez and Michel[3] in a paper comparing the optical and chemical properties of pyromorphite and the mimetite find that these minerals can be divided into four types; (1) pure pyromorphite, uniaxial, (2) pure mimetite, biaxial, (3) mixtures showing pyromorphite in the centre, surrounded by mimetite, part uniaxial, part biaxial, (4) groups of crystals having their axes inclined to one another, biaxial appearance.

CHALCOCITE ON AN OLD COIN.—Upon some bronze Roman coins found at the bottom of a French lake, Daubree[4] has observed an incrustation, 2^{mm} in thickness, of chalcocite. The chalcocite forms hexagonal plates like the cupreine of Breithaupt. Some chalcopyrite and malachite were also formed. While similar incrustations are common in thermal springs and mineral waters, the present case is interesting in that the water was cold and pure.

NOVA SCOTIA MINERALS.—Among other minerals found in the trap of Nova Scotia, Gilpin[5] mentions Chlorophœite, Delessite, Acadialite, Mordenite, Louisite, Ledererite, Gyrolite, Centrallasite, Cyanolite, Steelite, etc. He regards Louisite as a variety of Okenite, and Steelite as a variety of Mordenite.

GEOGRAPHY AND TRAVELS.[6]

M. DE BRAZZA'S JOURNEY FROM THE OGOWE TO THE CONGO.—Some further details of M. de Brazza's journey are given in the Royal Geographical Society's *Proceedings* for November, 1881. "After leaving his station at Francheville in July, 1880, the traveler saw the sources of the Passa affluent of the Upper Ogowé, and crossed the River Lekéti (an affluent of the Alima, the Kunia

[1] Mem. Ac. Sci. Bologna, 1881, 2, 397.
[2] Ann. d. Min., XVIII, 538.
[3] Bull. Soc. Min. de France, 1881, 196.
[4] Comp. Rend., XCIII. 572. Oct., 1881.
[5] Proc. and Trans. N. S. Inst. Nat. Sc., V, 283.
[6] Edited by ELLIS H. YARNALL, Philadelphia.

of Mr. Stanley's map), which appears to have been misnamed M'pama in the map of his previous journey, by this route reaching the navigable portion of the Alima in four days. It is thought probable that the plateau of the Batékés reaches to the right bank of the Upper Ogowé, and is connected with that of the Bayakas, in which, perhaps, the River Ngunié, which joins the Ogowé below Lambaréné, takes its rise. The plateau of the Batékés (Achicuyos) separates the Alima from the M'pama (the M'paka of Mr. Stanley), which probably rises in the plateau of the Balalis, flowing direct to the Congo. Leaving the plateau of the Batékés (Achicuyos) by the M'pama, M. de Brazza arrived at the plateau of the Abomas, which is well peopled and very fertile, and separates the M'pama from the Lefini (the River Lawson of Mr. Stanley). On leaving the plateau of the Abomas M. de Brazza was assured that he could reach Stanley Pool on the Congo in four days, by way of the plateau of the Makokos, but he thought it advisable to change his route, in order to enter into negotiations with the Ubangi tribe, with whom he had had previous difficulties. He afterwards descended the Lefini on a raft to within a day's journey of its confluence with the Congo. He then marched by land, with only five attendants, in two days, to the Congo, which he reached near to a populous part of the Ubangi country. He was received by the chief Ngampéi, who is subject to the Makokos, and arranged with him to make certain propositions to the Ubangis. Without waiting for the result of this step, he returned to the Lefini, and in two days' time reached the plateau of Makoko, to whom all the country is subject between the Lefini, the Jué (Zué of Mr. Crudgington, and Gordon Bennett of Mr. Stanley), and the Congo. Makoko assembled all the chiefs of the Ubangis, from the Alima, the Bakinga (the Likuma or Likona of the old maps), and the Ikelemba and through his influence peace was made with M. de Brazza. Makoko then sent two chiefs down with him by canoe to the spot ceded for the Brazzaville station, near Stanley Pool. Whilst there, M. de Brazza explored the road from the village of N'gamforu, chief of the Abomas, to the River Kunia, across the plateau of the Makokos; and he considers that the principal difficulties to be met with on the road from Francheville to Stanley Pool would be the passage of the Rivers Leketi, M'pama, and Lefini."

CENTRAL AFRICA.—The African traveler, Dr. Enim Bey, believes there are three lakes lying to the north of the Victoria Nyanza. Beatrice Gulf certainly does not belong to the Albert Nyanza, but to a lake south of the Albert. Steamers now go regularly from Dufilé to Mahagé, a station on the west coast of Lake Albert.——At the beginning of the present year Mr. J. M. Schuver left Cairo with the intention of traversing Africa from north to south. When last heard from he was on his way to

Fadasi near the Yabos affluent of the Blue Nile in about E. long. 35° 10′ N. lat. 9°. He expected to return to Fazogl and journey through the Galla country after the rainy season was over. In this stage of his great journey Mr. Schuver's chief objects are stated to be the determination of the sources of the Sobat and the discovery of the lakes, which are believed to exist on the high plateau between the White Nile and Kaffa.——Mr. Joseph Thomson has recently been exploring the Loende tributary of the Roouma River. No coal was found. The whole country is thickly covered with forest composed chiefly of India rubber trees. The land rises immediately from the shores of the Indian Ocean to an altitude of three hundred feet, and gradually an elevation of three thousand feet is attained. Mr. Thomson now intends to visit the region lying between the sea and Mount Kilimanjaro and extending from Melinda on the north to Pangani on the south. ——The Missionary Expeditions to Lake Tanganyika continue to be unfortunate. The Algerian Mission at Urundi, near the head of the lake, reports the murder of three of its members and nearly all the missionaries of the London Missionary Society on the west shore of the lake were incapacitated by illness at last accounts.——Herr Flegel has succeeded in ascending the Niger to Gomba, but the boatman refused to go on to Say. He proposed to explore Adamawa in search of the sources of the Binué.——Mr. Stanley succeeded in reaching Stanley Pool in the latter part of July and spent several days there. He confirms the belief expressed by M. de Brazza and the Baptist Missionaries, that the Pool is more than one degree further west than he fixed it in his map. The longitude now given is 15° 47′ west from Greenwich. The country on the north bank of the Congo is reported to be exceedingly healthy.——The *Athenæum* says: "The expedition which the American Board of Commissioners for Foreign Missions, despatched to West Africa a little more than a year ago, appears to have made fair progress. The object is to found an extensive American mission on the Bihé plateau as that field of labor is entirely distinct from those worked by European agencies. The party arrived at Benguela in due course and afterwards took up their abode at Calumbella, twelve miles off, and were delayed there till March 11th, chiefly owing to difficulties about porters, which appear to be as great there as on the eastern side of the continent. Starting at last on the day named, they made what is, for African traveling, a rapid march to Bailunda, accomplishing the two hundred miles in fifteen days. Mr. Bagster and his companions settled here for a month to await the arrival of stores from the coast before moving on to Bihé, some fifty miles distant. In the middle of April it became evident that Mr. Bagster must go to the coast and hurry on matters. He accordingly left his companions at Bailunda to study the Ambunda language and returned to Benguela." Later intelligence informs us of his having

rejoined the party, now settled in camp, some six days march from Bihé. The nights there are cool, the thermometer falling as low as 40° and rising at noon to 85° or 90°. The natives are friendly. The missionaries have made some progress in learning their language.——Dr. Pogge and Lieutenant Wissmann were at Malange at the end of last May, and hoped to arrive at Kimbundo in the latter part of June. They started from Loanda in January and ascended the Kwanza river for some distance.

ARCTIC DISCOVERY.—The Brothers Krause, sent out by the Bremen Society, have visited the Chukchi peninsula at various points and intend spending the winter in the north of Alaska.

Captain Adams, the well known Arctic whaling captain, has this last summer penetrated as far up Wellington Channel as an expedition has ever been. He then steered down Peel Sound to within a short distance of where the *Erebus* and *Terror* were lost. He also visited Beechey Island and the Gulf of Boothia. From an Eskimo near Fury and Hecla Straits, Captain Adams heard a story concerning the death of an officer—possibly Lieutenant Crozier, and two seamen of the Franklin expedition.

Mr. Leigh Smith's vessel, the *Eira*, in which he sailed for Franz Josef Land, has probably been beset by the ice, as she has not been heard from. She was provisioned for fourteen or fifteen months.

The Italian Antarctic Expedition has failed for want of funds. Lieutenant Bove has, however, gone to Buenos Ayres, to explore the coast lands of Patagonia and Eastern Tierra del Fuego for the Argentine Government. He will be accompanied by a number of Italian savants in a separate vessel.

INTERNATIONAL POLAR CONFERENCE.—The Conference was held this year at St. Petersburg. Delegates were present from Denmark, Norway, Sweden, Russia, Austria-Hungary, France and Holland. Polar stations are to be established at Upernavik by Denmark, at Bosskop, Finland, by Norway, at Jan Mayen by Austria-Hungary, at the mouth of the Lena and Novaya Zemlya by Russia and in Spitzbergen by Sweden. Observations are to be begun as soon as possible after August 1, 1882, and continued as far as practicable until September 1, 1883. Meteorological and magnetic phenomena will be observed, hour by hour, and on the 1st and 15th of each month observations will be taken every five minutes during the twenty-four hours, and every twenty seconds during one hour, which will be previously fixed; mean time at Göttingen being adopted in all cases. It was recommended that observations of the temperature of the soil, of evaporation, of terrestrial galvanic currents, of atmospheric electricity, etc., be taken. It was resolved (1) to found, if possible, a special publication to bring more quickly to the knowledge of the scientific world, as well as of the leaders of the various expeditions, the results

achieved from time to time, etc.; (2), to leave behind, where practicable, the buildings and other of the equipments of expeditions likely to be useful to future investigators in the same branches of science, and to take all possible precautions for their preservation; and (3), to endeavor to make arrangement with railway and steamer companies for the reduction of the cost of passages and transport.

GEOGRAPHICAL NEWS.—The second Geographical Society in the United States has been organized at San Francisco, under the title of The Geographical Society of the Pacific.——The recent census of India, shows the total population to be 252,000,000.——Russian explorers have recently visited the Bai Shan Mountain, twelve miles north-east of Kuldja and found that the fires that have been burning there from time immemorial are not volcanic, but proceed from burning coal. On the sides of the mountain there are caves emitting smoke and sulphurous gas. The question as to the existence of volcanic formations in Central Asia, may now be considered as decided in the negatative.—— The *Nature* states that "Mr. James Jackson, 'Archiviste-Bibliothécairé' of the Paris Geographical Society, has published, in a volume of 340 pages, a 'Liste Provisoire de Bibliographies Géographiques Spéciales.' The list was undertaken at the instance of the Society, and was printed in some haste, we believe, for the recent Venice Congress. But when we remember that the list is only a bibliographical one, a list of lists, in fact, the accumulation of geographical literature is almost appalling. It bears evidence of extensive and careful research, though the author admits that it is by no means exhaustive. Mr. Jackson recently visited the United States to search the libraries there, and the result is a work invaluable to all students of geography. He has wisely devoted comparatively small space to Europe, because, as he states, the works relating to the countries of that continent are well known and easily accessible. Mr. Jackson gives not only bibliographies proper, but references to works on travel and geography, and to periodicals, journals, and transactions, which contain special lists. The divisions of the list are:— Europe, Asia, Africa, America, Oceanica, Polar regions, Oceans and Hydrography, Peoples and Nations, Voyages, Travelers, and Geographers, and Generalities. By means of the arrangement under each division the methodical table of contents, the index to authors and periodical publications, the work is rendered easily consultable. It reflects the greatest credit on Mr. Jackson's industry and on the enterprise of the Paris Society."——A new island has been discovered in lat. 7° 48′ S, long. 83° 48′ W. and 188 miles from Punta Aguja, south of Guayaquil, the nearest land. It appears to be of volcanic origin and is only fifty feet above the sea, in its highest part. It is a mile long and about the same width.——In the northern portion of the Chinese pro-

vince of Shensi the sand from the desert is seriously encroaching on the country and has already half buried some cities. The high walls which have hitherto kept it out of Yülin will not much longer be of any avail, as the sand is already heaped almost to the top.——An expedition was sent last summer to explore the neighborhood of Bear Lake, British Columbia, which was previously quite unknown.——In the Geographical Section at the Meeting of the British Association, in addition to the papers heretofore mentioned the following were read:—Progress of Arctic Research since the Foundation of the British Association, by Clements R. Markham, F. R. S; On the Island of Socotra, by Professor J. Bailey Balfour; Journey to the Imperial Mausolea, East of Peking, by F. S. A. Bourne; Comparative Sketch of what was known of Africa in 1830, with what is known in 1881, by Lieutenant Col. J. A. Grant; Some Results of Fifty Year's Exploration in Africa, by the Rev. Horace Waller; Recent Visit to the Gold Mines of the West Coast of Africa, by Commander V. L. Cameron, R. N.

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SCIENTIFIC NEWS.

— The first part of a valuable work by M. Alph. Milne Edwards, on "The Fauna of Austral Regions," has been presented to the French Academy. The geographical distribution of birds is chiefly dealt with. It is remarkable (and would hardly have been expected) that these animals are eminently adapted to reveal the existence and position of the zoölogical centers whence the various species have radiated. The penguins are specially interesting in this respect. They appear to have migrated from a center of production in the Antarctic islands, near Victoria land, and to have followed the great currents going northwards, reaching the waters of Cape Horn, the Falklands, New Georgia, the Cape of Good Hope, and various islands of the Indian ocean, establishing, in each case, powerful colonies, with (in time) distinctive characters. Another colony, represented by the Spheniscans, starting from the same center, and favored by Humboldt's current, has gone to the west of Cape Horn, along the coast of Chili, to Peru and the Gallipagos islands, touching at various points.

— The volume on the Vertebrata of the Western Tertiary formations on which Professor Cope has been engaged for several years, is, we understand, approaching completion. Most of the plates are drawn, and the printing of the text is well advanced. This work will cover much ground, and will furnish much detailed information on a subject which has of later times excited general interest. The volume is No. IV of the Hayden series. Vol. III will follow. It will give a similar account of the recent discover-